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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/713,114

11/17/2003

Yoshiaki Hamano

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EXAMINER

LEE, CYNTHIA K

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

02/26/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<i>Office Action Summary</i>	Application No.	Applicant(s)	
	10/713,114	HAMANO ET AL.	
	Examiner	Art Unit	
	CYNTHIA LEE	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2009.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 6-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

This Office Action is responsive to the after final amendment filed on 2/5/2009. Claims 1-5 and 14 are pending. Claims 6-13 are withdrawn from further consideration as being drawn to a non-elected invention. Applicant's arguments regarding prior art Lee have been considered and are persuasive. Claims 1-5 and 14 are non-finally rejected for reasons stated herein below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 contains a chemical formula with oxygen. However, the instant Specification, for example Table 3, states the final product without oxygen. Applicant is requested to make the record clear.

Claim Rejections - 35 USC § 103

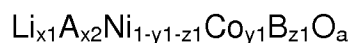
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 14 are rejected under 35 U.S.C. 103(a) as unpatentable over Lampe-Onnerud (US 2002/0192552).

Lampe-Onnerud discloses a positive electrode and a lithium secondary battery.

Lampe-Onnerud discloses that the positive electrode contains particles of the following formula:

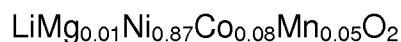


A is at least one element selected from barium, magnesium, calcium and strontium,

B is at least one element selected from boron, aluminum, gallium, manganese, titanium, vanadium, and zirconium,

in which $0.1 < x1 < 1.3$ and $0.0 < x2, y1, \text{ or } z1 < 0.2$. See Abstract.

A specific disclosure of a compound is given:



(Refer to Example 6 [0104])

Given the limited number of possible species for the substitution of Mg for Ba, and Mn for Al, and Mn of Example 6, one of ordinary skill in the art is able to “at once envisage” the elements of the compound claimed based on a limited class of compounds that can be interchanged for compounds A and B.

It has been held that if one of ordinary skill in the art is able to “at once envisage” the specific compound within the generic chemical formula, the compound is anticipated. One of ordinary skill in the art must be able to draw the structural formula or

write the name of each of the compounds included in the generic formula before any of the compounds can be “at once envisaged.” One may look to the preferred embodiments to determine which compounds can be anticipated. In re Petering, 301 F.2d 676, 133 USPQ 275 (CCPA 1962). See MPEP 2131.02.

Regarding the range of Ba (Applicant’s claim 1), see Abstract and [0074]. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists, see MPEP 2144.05.

Regarding claims 2-5, it is noted that Lampe-Onnerud uses lithium nitrate as the source of lithium (example 6, [0105]) The instant Specification pg 12, last full par. states that the nitrate of Li enhances the formation of amorphous phase during firing, and thus the above compound possesses amorphous regions within and on the particles.

Claims 1-5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US 5679481) in view of Kweon (US 2002/0192148).

Takahashi discloses a positive electrode and a lithium secondary battery.

Takahashi discloses that the positive electrode contains particles of the following formula in Example 4:



Regarding claims 2 and 5, Takahashi uses lithium nitrate as the source of lithium (9:8). The instant Specification pg 12, last full par. states that the nitrate of Li enhances

the formation of amorphous phase during firing, and thus the above compound possesses amorphous regions.

Takahashi does not disclose a compound containing Al (Applicant's claim 1). Takahashi does not disclose amorphous regions within and on the particles (Applicant's claim 3 and 4). Kweon teaches of doping a cathode material with aluminum isopropoxide [0028, 0070]. Kweon also teaches that aluminum nitrate can be used [0032]. Kweon teaches that the modified cathode increases the high rate charge and discharge capability, cycle life, and specific discharge capacity [0028]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to dope aluminum to Takahashi's positive cathode for the benefit of increasing the capacity of the battery. The instant Specification pg 12, last full par. states that the nitrate of Al enhances the formation of amorphous phase during firing, and thus the above compound possesses amorphous regions. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature *is necessarily present in that which is described in the reference*. In re Robertson, 49 USPQ2d 1949 (1999).

Kweon teaches that varying the amount of doped Al affects the discharge capacity (See fig. 4), thus clearly teaching that the amount of Al doped is a result effective variable. It has been held by the courts that discovering an optimum value or workable ranges of a result-effective variable involves only routine skill in the art, and thus not novel. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). See MPEP 2144.05.

Response to Arguments

Applicant's arguments regarding prior art Lee filed 2/5/2009 have been fully considered and were persuasive. Thus the rejection has been withdrawn.

Only the relevant arguments will be addressed below:

Applicant argues that Lampe-Onnerund gives a broad disclosure in that the total combinations for 1905 and thus the substitution Ba and Al for Mg and Mn would not have been obvious.

In response, the Examiner notes that should Lampe-Onnerund have solely disclosed the formula in the Abstract, the combination may have been 1906, but given the disclosure of Example 6, it is noted that the combination of possibilities is 28, calculated by $A*B$, or $4*7$.

Regarding Applicant's range that the Applicant' claimed range of "d" of 0.0005 - 0.007 is not obvious in light of Lampe-Onnerund's 0.01, the Examiner notes that the Applicant argues unexpected properties, but does not refute the Examiner's position that 0.01 is close enough to Applicant's 0.0005 - 0.007 in that it has been held that a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.05.

The Examiner notes that Applicant's 0.0005 - 0.007 does not yield unexpected properties from Lampe-Onnerund's 0.1 because the instant Specification states that

"The amount of Al is set to 0.01 to 0.1 mol. If it is less than 0.01, the effect of Li ion diffusion and the like is low. If Al is mixed at an amount in excess of 0.1 mol, the capacity of a battery lowers so that the amount of Al is limited to the range of 0.01 to 0.1 mol." Pg 10, 3rd full par.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Lee whose telephone number is 571-272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cynthia Lee/

/PATRICK RYAN/

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Examiner, Art Unit 1795

Supervisory Patent Examiner, Art
Unit 1795

ckl

Cynthia Lee

Patent Examiner